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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,578	08/17/2001	Blake Lewis	103.1072.01	5197
22883	7590	04/08/2005	EXAMINER	
SWERNOFSKY LAW GROUP PC P.O. BOX 390013 MOUNTAIN VIEW, CA 94039-0013			LE, MIRANDA	
			ART UNIT	PAPER NUMBER
			2167	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/932,578	LEWIS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Miranda Le	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/12/2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

*le*

### DETAILED ACTION

1. This communication is responsive to Amendment, filed 11/12/2004.

Claims 25-39 are pending in this application. Claims 25, 32, 35-38 are independent claims. In the Amendment, claims 25, 27 have been amended, claim 24 has been cancelled, no claims have been added. This action is made Final.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 25-35, 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Sekido et al. (US Patent No. 6,311,193).

Sekido anticipated independent claims 25, 32, 35, 37 by the following:

**As per claim 25**, Sekido teaches a method of operating a file system, said file system including an active map of information indicating in-use- and free blocks (col. 18, line 55 to col.

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19, line 22, col. 17, lines 23-63), said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time, a method of updating said summary map, said method including (col. 2, line 39 to col. 3, line 39, col. 18, line 55 to col. 19, line 28),

computing a summary map (see Fig. 31) in response to at least two copies of earlier active maps included in at least two of said snapshots (col. 18, line 55 to col. 19, line 28, col. 17, lines 23-65, col. 14, lines 26-48, Fig. 35).

**As per claim 32**, Sekido teaches in a file system including an active map of information indicating in-use and free block (col. 18, line 55 to col. 19, line 22, col. 17, lines 23-65),

said file system maintaining a set of snapshots , each snapshot including a representation of said file system as it was at an earlier time (col. 2, line 44 to col. 3, line 21, col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63),

said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including (col. 7, lines 16-64, col. 18, line 55 to col. 19, line 28, col. 17, lines 23-65, Fig. 31),

receiving a request to delete a selected snapshot (col. 16, lines 23-44, col. 18, line 55 to col. 19, line 28);

for a block used by said selected snapshot, indicating said block is free (i.e. valid block) in said summary map only in response to a snapshot just prior to said selected snapshot and in

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response to a snapshot just after said selected snapshot (col. 8, line 31 to col. 9, line 27, col. 18, line 55 to col. 19, line 28).

**As per claim 35**, Sekido teaches in a file system including an active map of information indicating in-use and free blocks (col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time (col. 2, line 44 to col. 3, line 21, col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63),

said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including (col. 8, line 59 to col. 9, line 49, col. 17, lines 23-63),

selecting a set of blocks maintained by said file system for which to perform a write allocation operation (col. 14, line 23 to col. 15, line 39, col. 18, line 55 to col. 19, line 22;

updating only a portion of said summary map corresponding to said set of blocks, in response to said selecting (col. 14, line 23 to col. 15, line 39, col. 17, lines 23-63); and

performing said write allocation operation in response to said updated summary map (col. 16, lines 1-22, col. 17, lines 23-63).

**As per claim 37**, Sekido teaches in a file system including an active map of information indicating in-use and free blocks (col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63),

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said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time (col. 2, line 44 to col. 3, line 21, col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63),

said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including (col. 14, line 23 to col. 15, line 21, col. 17, lines 23-63),

refraining from indicating a selected block as free in response to whether said selected block is included in said copy of an earlier active map (col. 14, line 23 to col. 15, line 21, col. 2, line 44 to col. 3, line 21, col. 17, lines 23-63).

**As per claim 26**, Sekido teaches making write allocation decisions in response to said summary map (col. 2, line 53 to col. 3, line 21, col. 5, lines 44-67, col. 18, line 55 to col. 19, line 27, col. 17, lines 23-63).

**As per claim 27**, Sekido teaches a result of said computing includes an indicator of a union of all blocks indicated by at least two said copies of earlier active maps included in said set of snapshots (col. 18, line 55 to col. 19, line 28, col. 17, lines 23-65, Figs. 31, 35).

**As per claim 28**, Sekido teaches said set of snapshots includes at least two said snapshots (col. 18, line 55 to col. 19, line 28, col. 17, lines 23-65);

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said computing includes performing a bitwise logical operation on at least two said copies of earlier active maps included in said set of snapshots (col. 17, lines 23-65, col. 18, line 55 to col. 19, line 28, Fig. 31).

**As per claim 29**, Sekido teaches making write allocation decisions both in response to a current active map and in response to said summary map (col. 2, line 53 to col. 3, line 21, col. 5, lines 44-67, col. 17, line 23 to col. 18, line 3).

**As per claim 30**, Sekido teaches computing a combination of a current active map and said summary map (col. 18, line 55 to col. 19, line 28);

making write allocation decisions in response to a result of said computing (col. 2, line 53 to col. 3, line 21, col. 5, lines 44-67, col. 18, line 55 to col. 19, line 28, col. 17, line 23 to col. 18, line 3).

**As per claim 31**, Sekido teaches for a selected portion of said summary map identifying a set of snapshots created since a recent update of said selected portion (col. 15, lines 21-58, col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63);

updating said selected portion in response to only a most recent one of said snapshots (col. 15, lines 21-58, col. 17, lines 23-63).

**As per claim 33**, Sekido teaches said indicating frees said block only when both said block is unused by said snapshot just prior to said selected snapshot (col. 9, lines 10-49, col. 17, line 23 to col. 18, line 3);

said block is unused by said snapshot just after said selected snapshot (col. 9, lines 10-49, col. 17, line 23 to col. 18, line 3).

**As per claim 34**, Sekido teaches wherein said snapshot just after said selected snapshot corresponds to an active file system (col. 9, line 51 to col. 10, line 33, col. 17, line 23 to col. 18, line 3).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).



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5. Claims 36, 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekido et al. (US Patent No. 6,311,193), as applied to claims above, in view of Rungta et al. (US Patent No. 6,484,186).

**As per claim 36**, Sekido teaches in a file system including an active map of information indicating in-use and free blocks (col. 2, line 53 to col. 3, line 21, col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63),

said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time (col. 2, line 53 to col. 3, line 21, col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63),

said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including (col. 14, line 23 to col. 15, line 21, col. 17, lines 23-63),

Sekido does not specifically teach “while generating a consistency point, selecting a set of blocks maintained by said file system and updating only a portion of said summary map corresponding to said set of blocks”. However, Rungta teaches this limitation at col. 3, lines 18-46.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the teachings of Sekido with the teachings of Rungta to implement generating a consistency point, selecting a set of blocks maintained by said file system and updating only a portion of said summary map corresponding to said set of blocks because it would have allowed an archive operation to backup a consistent version of files while the files are open for writing.

**As per claim 38**, Sekido teaches in a file system including an active map of information indicating in-use and free blocks, a method of updating said active map, said method including (col. 6, lines 18-36, col. 15, lines 21-58, col. 17, lines 23-65, col. 18, line 55 to col. 19, line 22, Fig. 31),

maintaining a plurality of copies of said active map, at least a first said copy being a substantially true representation of in-use- and free blocks (col. 17, lines 23-63),

and at least a second said copy being a representation of in-use and free blocks which reflects fewer free blocks than said first copy (col. 2, line 53 to col. 3, line 21 col. 17, lines 23-63);

Sekido does not specifically teach “wherein said second copy refrains from indicating a selected block as free until after a next consistency point is completed”. However, Rungta teaches this limitation at col. 3, lines 18-46.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the teachings of Sekido with the teachings of Rungta to include said second copy refrains from indicating a selected block as free until after a next consistency point is completed because it would have allowed an archive operation to backup a consistent version of files while the files are open for writing.

**As per claim 39**, Rungta teaches swapping said second copy with said first copy after said consistency point is completed (col. 13, lines 13-41, col. 3, lines 18-46).

*Response to Arguments*

6. Applicant's arguments filed 11/12/2004 have been fully considered but they are not persuasive.

Applicant argues that:

(a) Sekido's reference does not teach/suggest claims 25, 32, 35, 36, 37's limitation of computing or maintaining a summary map.

(b) Sekido's reference does not teach/suggest claims 38's feature of maintaining two active maps, with one of the active maps reflecting fewer free blocks than the other active map.

The Examiner respectfully disagrees for the following reasons:

Per (a), a summary map is shown in Fig. 31. This summary map comprises two copies of earlier active map ST1 and ST3 included in at least two of said snapshots (SS1 and SS3).

It should be noted that the snapmaps ST1 and ST3 represent the snapshots SS1 and SS3.

As seen in Fig. 31, the summary map and snapmaps ST1, ST3 indicating the valid blocks (i.e. free blocks) B2, B7, B8, B12, and B13 and the invalid blocks (i.e. in-used blocks) B18, B19, B20, B21, B22, B24, B25, B27, B29.

Moreover, the union of all blocks is shown in the summary map in Fig. 31. The bit map ST10 is the result of the union all the blocks (i.e. valid blocks) of ST1 and ST3.

The snapshot ST1 consists of the 5 valid blocks (i.e. free blocks) B13, B2, B7, B8, B12.

The snapmap ST3 consists of the 9 valid blocks (i.e. free blocks) B20, B24, B21, B25, B29, B18, B22, B19, B27.

The snapmap ST10 shows the union of all 14 blocks.

Further, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "summary map refers to a file including an IOR bitmap of all the snapmaps") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Per (b), under similar rational as provided in (1), and (2) in light of Fig. 4, the same reasoning would be applicable to maintaining two active maps. Referring to Fig. 31, the snapmap ST1 has 5 valid blocks, and the snapmap ST3 having 9 valid blocks; it is hence understood that the second copy of active map (i.e. ST1) reflects fewer free blocks than the first copy (i.e. ST3).

Therefore, the claim language as presented is still read on by the Hitz reference at the cited paragraph in the claim rejections. Arguments as raised are moot since all claim limitations relevant to this issue have been addressed accordingly.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

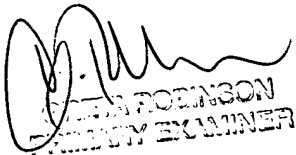
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (571) 272-4107. The fax number to this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le  
April 04, 2005



JOHN E. BREENE  
SUPERVISOR